

# The Mining Journal

Established 1835

Railway & Commercial Gazette

Vol. CCXLVII No. 6312

LONDON, AUGUST 10, 1956

PRICE 9d.



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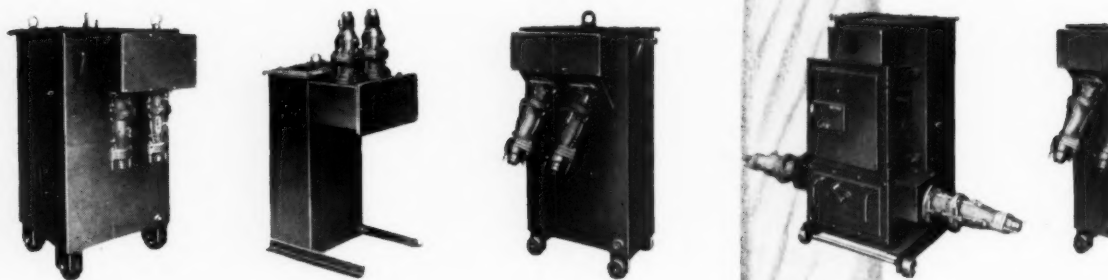
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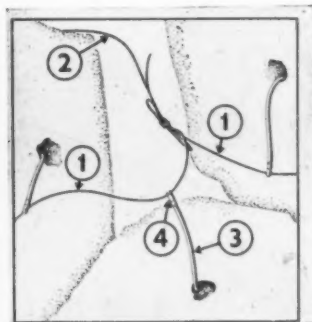


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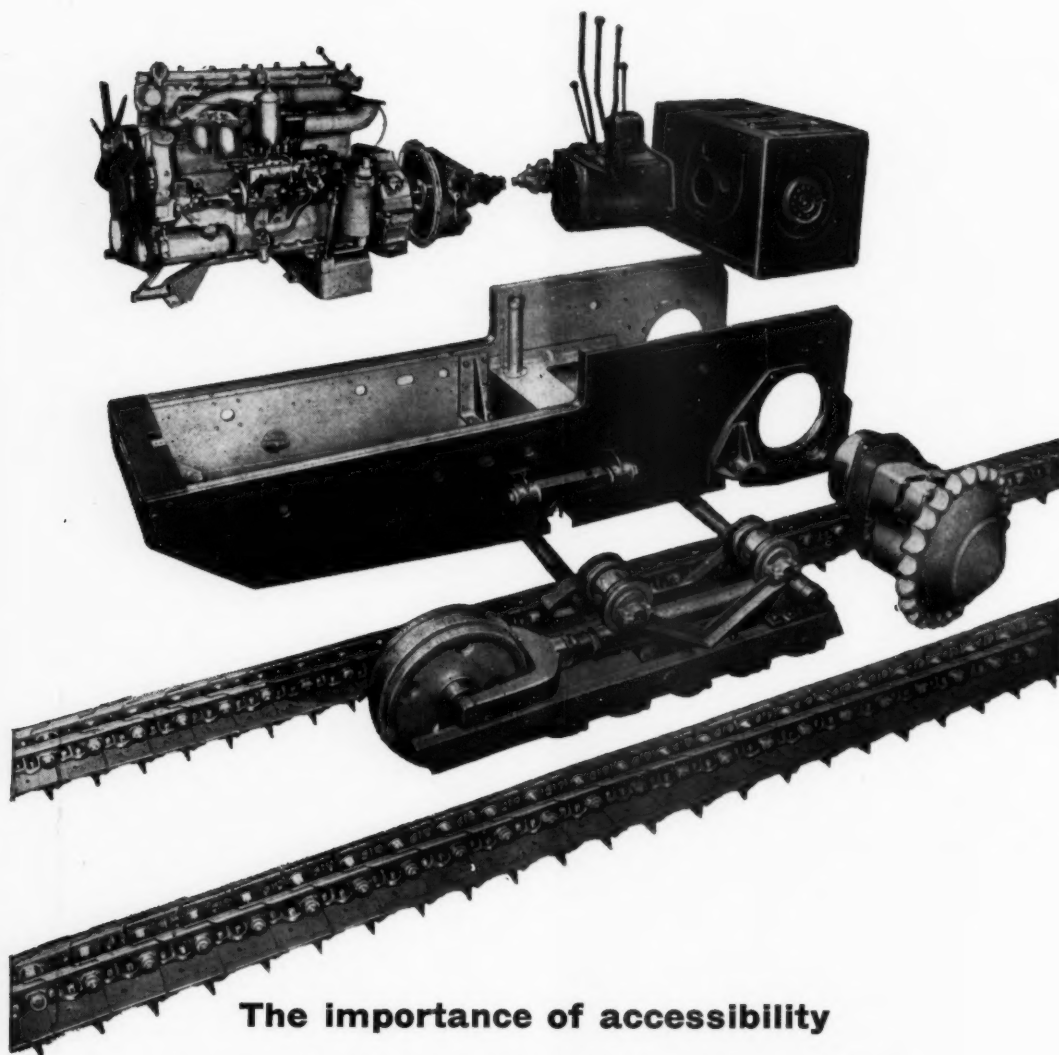
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## CONTENTS

Notes and Comments .....	163	Technical Briefs .....	170
From Our Canadian Correspondent .....	164	Reviews .....	170
Mining Potential of the British Protectorates in Southern Africa .....	165	Mining Miscellany .....	171
Mount Isa Mines £20,000,000 Expansion Programme .....	166	Metals, Minerals and Alloys .....	172
Advantages of Diesel Hydraulic Mine Locomotives .....	167	Company News and Views .....	174
Relationship of Lingerwood Colliery to the Newbattle Surface Reconstruction Scheme .....	168	Company Meeting .....	177
		Kent (F.M.S.) Tin Dredging Limited .....	
		Classified Advertisements .....	178

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## NOTES AND COMMENTS

### Achievements in Price Stabilization

Mining companies throughout the world which are purchasers of British-made equipment and supplies cannot but approve in principle of the efforts of the U.K. government to achieve a price plateau. Because of the fixed price of their own products, gold producers are perhaps the greatest beneficiaries of any movement which helps to keep down the prices of equipment they require, but working costs also loom large in most other branches of the mining industry, except during periods of under-supply. Marginal producers are, of course, particularly vulnerable to increases which they cannot pass on immediately and in full.

At a time when U.K. manufacturers are repeatedly being exhorted to avoid raising their prices, it is appropriate that due credit should be given to the by no means inconsiderable number of firms and industries that have consistently adopted a policy of price stabilization, some of them with conspicuous success. As a result of technical efficiency and sound administration, various manufacturers have been able not merely to absorb increases in costs of labour and materials, but even to reduce the prices of certain products. Study of their balance sheets indicates that price stabilization may be attainable without adversely affecting the upward trend in profits, due, doubtless, not only to the effects of improved efficiency, but also in some measure to the favourable impact of this policy on demand. Thus Mr. H. W. P. Matthey, chairman of Johnson, Matthey & Co., was able to state in his annual review that, "up to the present," the company's "no increase" policy in refining and manufacturing charges appeared to have had little or no adverse effect on its affairs, since the voluntary reduction of margins had so far been compensated by a high rate of turnover.

Welcoming the declaration on inflation and prices issued jointly by the Federation of British Industries and other bodies, the board of Imperial Chemical Industries states that the weighted average of the company's home selling prices has advanced by only two-thirds since 1946, although the purchase price index for the company's raw material has increased during the past decade to 2½ times the level in 1946, and over the same period the I.C.I. index of earnings per employee of all grades has doubled. These increases

have been absorbed partially by the improvement of internal efficiency and in part at the expense of profit margins.

In further support of the policy of price restraint advocated by the F.B.I., it has been decided to make no further increase in the home trade prices of a number of the company's products including chemicals, explosives, paints and plastics, at least until June 30, 1957, provided no unexpected or exceptional factors intervene, and provided the company does not incur any major increase in the cost of freight or fuel before that date. The production costs of certain products, particularly those involving non-ferrous metals, depend markedly on imported raw materials which fluctuate widely in price, and for these the company can do no more than continue its policy of price restraint.

During recent years I.C.I. has even lowered prices for a number of its products. For example, the price of its polythene and polythene compounds has just been reduced by 3d. per lb.—the third price reduction in three years.

We share the view that a general return to selling at prices which are quoted firm, for specific and appreciable periods of time, would be a most important step. Such methods were characteristic of British commercial practice before the war. It would be greatly to the advantage of the mining industry if they were re-adopted as widely as possible.

### Lead, Zinc and Pyrites in Yugoslavia

Yugoslavia's rich lead and zinc ores have been known and exploited for many centuries. Lead ores were worked in the time of the Romans as well as in the Middle Ages. During the period between the two world wars lead and zinc ores were exploited at Trepca and Meze and, to a lesser extent, at Kopaonik. Shortly before world war two the Zletovo mines were ready for exploitation. New lead and zinc mines opened up during the post-war decade include those of Rudnik, Lece, Veliki Majdan, Novo Brdo, Ajvalija and Janjevo and Suplja Stena. The Kopaonik mines, which were completely destroyed during the war, have been rehabilitated.

Since 1951 all lead concentrate produced in Yugoslavia



has been processed at the Trepca and Mezice smelters. Up to 1956, however, zinc concentrates were only partially processed in the country at the Celje plant. This year, when the zinc electrolysis plant at Sabac comes into operation, large quantities of zinc concentrate will be processed in Yugoslavia.

Yugoslavia is at present Europe's largest producer of lead from lead-zinc ores and the seventh largest in the world. In the production of zinc from lead-zinc ores she occupies fifth place in Europe and twelfth in the world. Her outputs of lead and zinc from lead-zinc ores account for 4.5 per cent and about 2.3 per cent respectively of the total world production. In 1955, exports totalled 63,704 tonnes of lead, 3,807 tonnes of zinc and zinc products, and 46,308 tonnes of zinc concentrates.

Thanks to the steadily increasing reserves of lead and zinc ores, Yugoslavia will retain her present high ranking position in the world production of both metals. During the last few years a number of new deposits have been discovered. Prospecting and exploration have revealed important ore reserves at Kislina near Ajvalija in Kosmet and at Srebrenica in Bosnia. These ores contain considerable quantities of silver.

A start will be made this year in the development of the mines at Kislina and Srebrenica. In the first stage, 150,000-180,000 tonnes of ore a year will be processed at Kislina and 100,000 tons at Srebrenica. Flotation plants will be built at both centres. The lead concentrates will be processed at Trepca, while the zinc concentrates will be processed in the country or sent abroad.

When both mines come into operation, the output of Yugoslavia's mining and smelting industries will be increased by some 9,000-10,000 tonnes of lead, about 10,000 tonnes of zinc concentrate, and 9-10 tons of silver. At present market prices the annual value of the metals obtained from concentrates emanating from these mines will exceed \$4,000,000.

It is anticipated that both mines will reach production towards the end of 1958.

Yugoslavia is a well known producer and exporter of pyrites concentrate with a sulphur content ranging from 45-49 per cent. This high grade concentrate is suitable raw material for the manufacture of sulphuric acid. The Bor and Trepca mines in Serbia are the principal producers of pyrite concentrate.

In the immediate post-war years Yugoslavia began exporting this important raw material to Germany and Austria, as well as the countries of Eastern Europe, Poland, and Czechoslovakia. The Yugoslav mineral, metal and non-metal export enterprise, Jugometal of Belgrade, recently concluded several contracts for sizable deliveries of pyrite concentrate to a number of German, Polish, and Czechoslovak firms.

During the first half of the year Jugometal exported only 503 tons of pyrite ore to the Viennese firm Hedwiga.

#### Radiation Damage to Metals

Metallurgists of the North-western Technological Institute in the U.S., in a project supported by the Atomic Energy Commission, have started an investigation into radiation damage to metals. They are pioneering the study of how high-energy electron bombardments affect the physical properties of such metals as silver, gold, iron, cobalt and nickel. Previous radiation damage studies have been concerned mainly with heavy particles. Electron particles permit greater control over the type of damage produced.

Initial investigations will measure threshold energy (the amount of energy required to displace an atom from its

normal lattice position) at a temperature 4 deg. above absolute zero. (Absolute zero is the lowest possible temperature and corresponds to 459.6 deg. below zero on the Fahrenheit scale.) This extremely low temperature will be produced with liquid helium. No threshold energies have been reported at temperatures lower than that of liquid nitrogen, which is about 365 deg. below zero Fahrenheit.

Other experiments are designed to determine the effects of various types of radiation damage on a metal's electrical resistance and elasticity.

Several metals will be used initially in the studies. The noble metals (silver, copper and gold) will be employed because of their simplicity and the fact that they allow and have been subjected to theoretical calculations. Effects of crystal structure will be studied with iron, cobalt and nickel, because each of these metals has one of the three typical crystal structures.

This new avenue of research may yield information of great practical value in the development of new materials for the coming era of atomics and supersonic flight.

## Canada

(From Our Own Correspondent)

Winnipeg, July 27.

Construction of the trans-Canada gas pipeline is proceeding on schedule, with pipe being laid at the rate of two miles a day. The cost from Alberta to the industrial provinces of Ontario and Quebec will exceed \$300,000,000, an additional \$1,000,000,000 or more may be spent on facilities for distribution and utilization of the gas at points of delivery.

Noranda Mines has completed construction of its sulphuric acid plant in the Blind River area of Northern Ontario. The plant has been designed for production of 500 tons of sulphuric daily for use in the mills of the uranium mines. However, so fast has been the growth of the Blind River uranium field, it has already become apparent that the sulphuric acid requirements will rise to possibly 1,500 tons daily within the next two years or so. As a result, Noranda is already planning enlargements to meet the growing need.

Another nickel producing field appears to be assured for Canada, this time in the Mystery Lake and Moake Lake area of Northern Manitoba. Properties held in the new field by International Nickel Company of Canada have indicated ore resources of 40,000,000 to 50,000,000 tons containing about 10 lb. of nickel per ton. A railway branch of 40 miles will be required, together with hydroelectric power development. The outlook is that production might materialize within the next three to four years.

#### MONEY AND MEN

The upsurge in the entire Canadian economy continues, with the capital expenditures for 1956 likely to exceed 1955 by at least 20 per cent. Playing outstanding roles in the stimulation of growth and expansion is the rising output of iron, petroleum, uranium, natural gas—and the widespread development of new copper-zinc mining fields.

The question of securing sufficient labour with which to maintain the current rate of expansion is causing serious anxiety among those managing the affairs of industry. It has become easier now to raise millions of dollars with which to finance a new project than it is to secure the working forces with which to operate the enterprise.

## Mining Potential of the British Protectorates in Southern Africa

The virtually simultaneous news that the United Kingdom Government was not prepared to meet South Africa on the question of the incorporation of the Protectorates—Basutoland, Bechuanaland and Swaziland—and that some £75,000,000 is reported as being made available for the development of Swaziland by Anglo American Corporation of South Africa Ltd., Rio Tinto Ltd., and Balfour Beatty, has focused attention on the potentials of these territories here discussed by our South African correspondent.

The last excitement over Swaziland minerals took place before the Rand was discovered and the concession hunters provided one of the most colourful and scandalous episodes in the country's history. The position became so bad that eventually the authorities cancelled all concessions granted by the Paramount Chief and a careful watch has been kept on the position ever since.

At present the main mining activity is the great Havelock Asbestos property on the Transvaal border near Barberton. Gold mining has taken place spasmodically and a little tin has been recovered. It was not until 1944 that a strong geological survey team was built up which has done extensive and intensive work. Up to the end of 1954 nearly 17,000 ft. of diamond drilling had been accomplished and investigations made into occurrences of a wide range of minerals, including asbestos, barytes, calcite, cassiterite, corundum, coal, columbite, diaspore, fluorspar, galena, iron ore, kaolin, monazite, nickel, pyrophyllite, silica, talc, vermiculite, and yttrantalite. Some 79 per cent of the territory has been mapped geologically.

### DEPOSITS OF IRON AND COAL

One of the major results was the locating and proving of iron ore deposits. These appear to run almost continuously along the western and southern sections of Swaziland. The deposits proved show the existence of at least 300,000,000 tons of low-grade ore (25-40 per cent iron) and 60,000,000 tons of high-grade (over 60 per cent). On the eastern side is coal, the deposit apparently stretching the whole length of the territory. The geological survey has also investigated the practicability of utilizing at least two of the major rivers for hydroelectric power and has reported favourably on this possibility. It is the combination of these three factors that seems to have decided Anglo American, Rio Tinto and Balfour Beatty to invest money in the country.

In a recent White Paper devoted to economic development and social services in the High Commission territories, a brief reference was made to the existence of iron ore and coal deposits in Swaziland. Although thorough investigation of these deposits will not be completed until 1957, an interim memorandum has been produced by the Geological Survey Development of Swaziland. Much of the information contained therein is of particular interest in light of the present situation.

The main iron ore deposit, located at Bomvu Ridge near Darkton in North West Swaziland, consists of a high-grade haematite with an indicated grade of 64 per cent iron and 3.5 per cent silica. The coal deposits form a north-to-south belt in Eastern Swaziland 8 miles long by 5 miles wide.

Basutoland has been in the news over the past few months in consequence of prospecting by Mr. Jack Scott (General Mining—Strathmore) into a possible diamond occurrence. Conflicting reports are current as to what is being found. Major mining developments in this area are not rated as a possibility, largely as the whole area is a portion of the Drakensburg mountain range, which so far has not produced anything startling in the mineral line. Its

importance, so far as the Union is concerned, is that the sources of the two great rivers—the Orange and the Caledon—lie within Basutoland. Both the British and South African authorities visualize the development of irrigation and hydroelectric schemes.

Bechuanaland is a vast area, and so far investigations have been largely limited to the areas along the Transvaal and Rhodesian borders. Mining started in the very early days with the Tati Concession, and small quantities of gold have been produced at different times. Some years ago an important deposit of high quality asbestos fibre was discovered, but this was not exploited on any scale until the end of 1951. The fibre is stated to rank with the best Canadian varieties.

A potential field for development appears to be the copper deposits near to and on the north-west of Francistown. A feature of these deposits is the ancient workings, some of which lie deeper than 100 ft. below surface. The deposits were worked earlier this century, but when the Bechuanaland Copper Co. went into liquidation after World War I, no further attention was paid to them. The territory's Geological Survey has been investigating the deposits and is of the opinion that they could be exploited economically. When the old mine closed down the ore reserves were stated to be 30,000 tons of 8.3 per cent copper.

Investigations are being conducted also into occurrences of coal. These appear to be extensions of the Waterberg deposits of the Transvaal, but as is the case with the Waterberg deposits, the Bechuanaland coals appear to be poorly developed with low calorific values.

### BRAKE TO PROGRESS

In a recent issue of *The Mining Journal*, in an article discussing the nickel resources of the world, reference was made to the South African deposits at Insizwa in the Transkei. The situation in regard to these deposits has been arousing some interest here of late. A company, Nickel Corporation, was floated a number of years ago, but nothing came of its activities, though the official reports on the occurrence have always been encouraging and suggest that a large-scale investigation might prove economical.

The deposit, however, lies within one of the major Native areas. Alienation of ground is very strictly controlled. At one time, relatively recently, it was stated that the government had invited tenders by mining undertakings to explore the area and possibly to exploit it. This apparently fell away with the publication of the Tomlinson Report—the master plan for the development of Natives within their own area. One of the suggestions put forward was that in due course, Natives should exploit the mineral resources in these areas themselves. Desirable as this may be in theory, the general view is that it is not a practical proposition from both the financial and technical aspects for many years to come. Unless, therefore, the authorities decide to depart from present policy it does not look as if any development of this deposit will take place. In addition, much the same position would appear to exist in respect of ilmenite beach sands which are reported to be relatively plentiful along the Pondoland-Transkei coast.

## Mount Isa Mines £20,000,000 Expansion Programme

The potentialities of unexplored regions of Australia are strongly emphasized by the work being carried out by Mount Isa Mines in North Queensland. This company has built itself up to the position of the largest mining organization in Australia and the end is not yet, writes our Australian correspondent in a recent despatch.

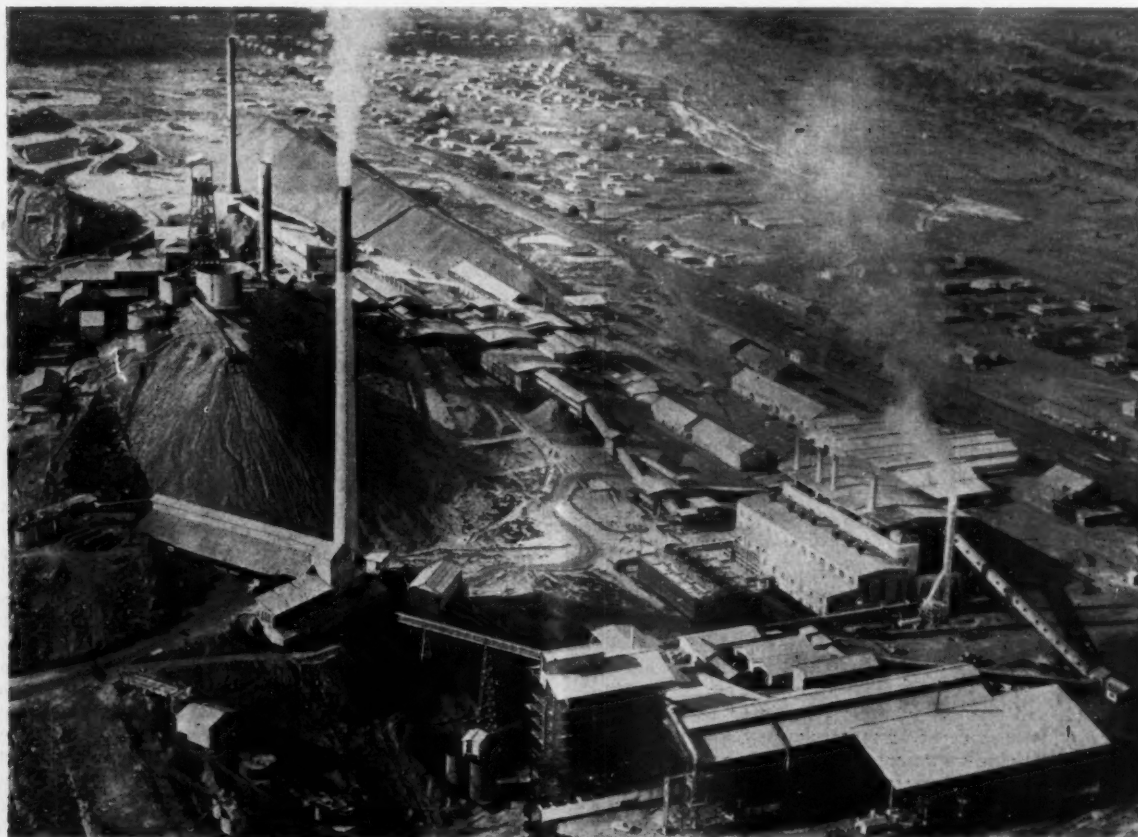
The sum of £A20,000,000 is to be spent on further expansion in the next five years with the doubling of the output potential. The present rate of output from the lead-zinc and copper sections is 1,300,000 tons of ore per year. With adequate Federal—and State—government encouragement and assistance exports of silver, lead, zinc and copper could be stepped up much more rapidly. Taxation assistance would allow the company to mine very large, low-grade deposits, a very valuable asset which can be irretrievably lost. Profits from gold and uranium are tax-free, and all other metals except lead and zinc—the metals in question—receive a 20 per cent taxation allowance.

From the State government angle, the 600 mile long railway is inadequate for the needs of the field and is a very serious obstacle to its expansion. For success, the very large bodies of low-grade material must be mined with the higher grade ores. The possibilities of the main section of

the lead-zinc and copper deposits are growing yearly, and the Northern Leases hold the prospect of the largest open cut mining project in Australia, but taxation consideration is essential for its realization.

Exploratory shaft sinking has reached a depth of 400 ft. and diamond drilling 1,200 ft. in a channel up to 500 ft. wide. At the main workings a new shaft is to be sunk and mill capacity for lead, zinc and copper is to be increased, together with extensions to the lead and copper smelters; a new administrative block is being built and a new power house is to be erected. For power supply, the company has its own collieries at Collinsville, near the coast, but even at the present scale of operations there is continual difficulty in the transport of adequate supplies of coal and coke to the mine. As part of the expansion scheme, a 7 mile long 10,000,000,000 gal. dam is being built on the Leichhardt River, and will be completed before the wet season commences in December; 300 more houses are to be built.

At Stuart, near Townsville, work has been commenced on the electrolytic copper refinery to deal with the whole of Mount Isa's production. The whole £20,000,000 expansion project of construction and underground development is to be financed from profits, and reserves.



A panoramic view of Mount Isa Mines Ltd.



## Advantages of Diesel Hydraulic Mine Locomotives

Diesel underground locomotives incorporating the Voith-North British fully automatic transmission are operating to-day in coal and metal mines in various parts of the world, and experience has shown that these units provide efficient and safe service. The whole locomotive, the transmission and applications of which are described in the following article, carries a Buxton flameproof certificate. The principle of power transmission through the medium of the kinetic energy of the oil in a hydraulic torque converter was first applied to marine steam propulsion, and was extended later to locomotives, the manufacturing rights for Britain and other territories being acquired by The North British Locomotive Co. Ltd. since the second world war.

The essential principle of the fully automatic hydraulic transmission is the use of a number of fluid circuits, each one adapted for a different range of working speed and the selection of the most suitable of these circuits for the particular conditions of working at any given moment by filling it with oil and leaving the others empty. There is thus no gear changing or operation of clutches. The flow of oil is controlled by a governor system operated automatically by the speed at the rail and the circuit selected is maintained in a full condition by an integral centrifugal pump which is permanently driven by the engine. Control by the driver is confined to the throttle lever and an unskilled person can drive after being instructed for only a few minutes.

Various types of transmission are manufactured but the one fitted to the 100 h.p. "Miner" locomotive is equipped with a torque converter for starting and low speeds and a fluid coupling for higher speeds. A torque converter is always used for starting. The transmission fluid is not only circulated by the pump through the fluid circuit in use at the time but is also passed through a cooler in which transmission losses, appearing as heat in the oil, are readily dissipated. It is impossible for the transmission to drive the engine backwards and so cause damage to the cylinders by drawing water from the conditioner, nor can the engine be stalled. Transmission maintenance is negligible since all rotating parts run on ball or roller bearings and no wear can take place in the parts which transmit power.

### ADVANTAGES OF HYDRAULIC TRANSMISSION

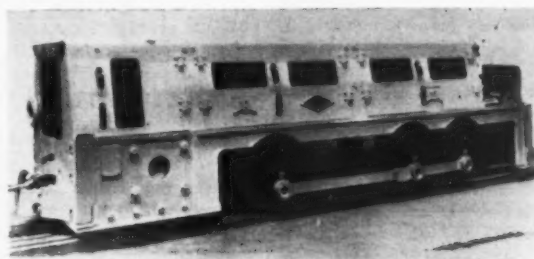
The advantages of hydraulic transmission may be summarized briefly as:

- (a) *Simple controls.* The only controls are throttle, reverse lever and brake;
- (b) *Smooth starting.* The torque curve is continuous and stepless, as in electric transmission;
- (c) *Less wheel slip.* Starting torque is applied to the wheels entirely without shock; if slipping occurs, the engine is prevented from racing;
- (d) *Steady acceleration.* The maximum speed is attained more rapidly since there is no clutch and no throttling back of engine speed;
- (e) *Cushioned power.* The absence of mechanical linkage between driving and driven parts prevents shock loads from being transmitted to the engine;
- (f) *Economical maintenance.* No wear takes place in the parts which transmit power.

Being no larger than standard mine cars, these locomotives are not only suitable for main road haulage but

can enter narrow workings in the early stages of development. Though small in profile the locomotives are of considerable power. The weight of the unit can be varied between 12½ and 15 tons and they can be built for track gauges between 2 ft. 5½ in. and 3 ft. 6 in. A further feature of these locomotives is the fitting of roller bearings to the cast steel axleboxes. One man can thus quite easily move a locomotive with the engine dead. A corresponding saving

has therefore been effective in the non-productive power absorbed by the locomotive itself.



The North British 100 h.p. flameproof diesel underground Miner locomotive

### SEVEN YEARS OF DIESEL HAULAGE

Among the largest users of the North British 100 h.p. flameproof diesel underground Miner locomotive is the Dominion Coal Company of Sydney, Nova Scotia. Its first locomotive was installed in May, 1949, at No. 18 Colliery in New Victoria, Cape Breton Island, to transport coal through a roadway one-half mile long driven between the Phalen and the Harbour seams. The use of North British locomotives has since been steadily extended to the Company's other mines in Cape Breton.

At No. 18 Colliery coal is transported from the longwall face by conveyor and rope haulage to the locomotive road, which is laid with 85-lb. rails and well ballasted to take the high speeds necessary to maintain the output on the haulage shift. Since 1949 the mine has been expanded and Dosco continuous miners have been installed on both the longwall faces. Aluminium 3-ton roller-bearing cars have replaced the 1-ton wooden cars originally employed. Coal is hauled on each of the two shifts and output sometimes exceeds 1,000 tons day. Yet such is the confidence in the reliability of the locomotive that the original machine carries on alone, with no standby alternative method of haulage.

The second locomotive was put to work in June, 1950, in Dominion No. 12 Colliery, New Waterford. The duty here is different from that at No. 18 Colliery in that the levels worked lie at a considerable depth under the ocean and that roads are sometimes badly crushed so that severe changes in gradient occur over short distances. Locomotive haulage has been found to combine economy in operation and maintenance with flexibility in keeping going under adverse conditions of gradient. As the unit is only 4 ft. 5 in. in height above rail level it can go through any road where the aluminium cars will pass. At these and other collieries in Nova Scotia of the Dominion Coal Company, further locomotives have since been installed and considerable numbers of additional units are being supplied.

Despite the difficult operating conditions prevailing in the Dominion Coal Company's Collieries the maintenance costs were kept under close control.

## NEWBATTLE RECONSTRUCTION—II

# Relationship of Lingerwood Colliery to the Newbattle Surface Reconstruction Scheme

During the summer meeting of the Institution of Mining Engineers at Edinburgh, visits were arranged to a number of Scottish collieries at which programmes of reconstruction and development were completed or well advanced. Among the most interesting of these projects is the Newbattle surface reconstruction scheme, which involved re-organization of Easthouses Colliery and of surface transport to a central preparation plant. The scheme is described in the following article, the second of three instalments, relating to the role played by Lingerwood Colliery in the overall scheme at Newbattle.

At Easthouses, after being uncoupled from the locomotive, the trains of full tubs are fed into two parallel full tub sidings by means of a 5 h.p. "LOFCO" type Renold chain creeper, running at a chain speed of 36 ft./min. They are also fed forward, as required, by two similar creepers, one on each track, to the tippler loading ram. When the empty tubs are discharged from the tippler, they gravitate into either of two parallel empty tub sidings, where they are coupled into trains.

The locomotives are of the electric battery type, manufactured by Greenwood & Batley Ltd. A special feature is double end control, which was specified to ensure maximum visibility by the loco driver when driving in either direction.

The locomotive batteries are charged on the battery transfer platforms in the locomotive shed at the pit bottom by means of Bruce Peebles selenium rectifiers with automatic control, by which the A.C. supply to the charger is cut off at a preset time interval after the battery voltage rises to 2.3 v. per cell.

At the mouth of No. 2 Incline the 3-rail track enters on to a vertical radius of 480 ft., which continues up over the surface gantry to the headgear pulleys. The length of the gantry is 131 ft, and the height is 33 ft. to the pulleys. When the train of two loaded cars is drawn on to the gantry, the drop bottom doors on the monitor cars are automatically tripped. As each car passes over the 40-ton hopper the doors are lowered in sequence on skid rails, allowing the coal to discharge. They are then automatically reclosed when the cars are drawn up over the door-closing ramp. The train travels at about 2 m.p.h. when the cars are discharging and the whole operation of emptying the cars and reclosing the car doors on the one train is completed before the other train lands on the buffer stop at the pit bottom.

From the bottom of the discharge hopper, the run-of-mine coal is fed by a plate belt feeder, running at 17 ft./min., which in turn feeds on to a 15 h.p. troughed belt

conveyor 242 ft. long running at 300 ft./min. This belt carries the coal to the surface transport loading station.

The main haulage engine, which has been installed to operate No. 2 Incline, is a steam-driven geared double drum hauler manufactured by Walker Bros. (Wigan) Ltd. When the train is being hauled at the full designed speed of 12 m.p.h., the drums revolve at 24 r.p.m. and the h.p. developed is approximately 1,000.

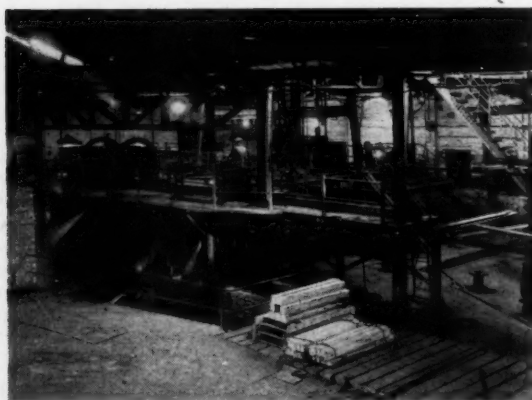
The loading station for the 10-ton capacity cars used for surface transport consists of a housing over the delivery end of the troughed belt conveyor and contains a small surge hopper with hydraulically operated quadrant door. The trains of empty cars are propelled at 10.6 ft./min. past the loading point without uncoupling, by means of a 7½ h.p. car handling creeper with hydraulic control of the epicyclic clutch and brake. The loading station attendant controls the creeper and hopper door by the hydraulic control valves and the troughed belt conveyor and feeding conveyors by stop/start electric push-button remote controls.

## LINGERWOOD COLLIERY

At this colliery the haulage and winding equipment are reasonably efficient. It was therefore decided to make no immediate alteration to the underground haulage and the winding equipment, but to reconstruct the tub handling arrangements on the surface. Traverser and tippler equipment was accordingly designed to handle mechanically the tubs on the surface and to establish the shortest possible tub circuit between the shaft and the tub tipplers. The design was carefully worked out to enable as much of the reconstruction as possible to be carried out beforehand.

The tub traversers are designed with two decks to permit simultaneous decking of the top and bottom decks of the cages. The traverser carriages are mounted on either side of the shaft. The mean traversing distance from the centre line of the shaft to centre line of the tippler platform is 28 ft. Each traverser carriage is attached to a 2 in. pitch Renold Duplex chain and both carriages are driven simultaneously and in unison through a driving shaft with a centrally mounted 15 h.p. motor with Holroyd worm reduction gear and thruster operated brake. The traverse are set in motion by push-button control gear and are stopped at the correct position opposite the tippler platform of either cage by track limit switches. Inching buttons are provided for adjustment of the traverser position when necessary. The push-button control gear is mounted on the fixed part of the pithead structure and pull wires are fitted to enable the traverser to be stopped from either carriage in emergency.

The tub tippler platform is equipped with two tipplers, one for each deck, 6 ft. 3 in. dia. x 8 ft. 6 in. long, driven independently through worm reduction gears by 7½ h.p. motors running continuously. The rotation of each tippler is initiated by push-button operation of a thruster to withdraw a wedge which automatically resets to stop the tippler after one revolution has been completed. A thruster operated drop plate is fitted in each tippler two-way discharge



Pithead Traverser arrangement at Lingerwood Colliery





Junction and signal cabin, Lingerwood

chute to permit either coal or redd to be discharged on to their respective conveyors. Each drop plate thruster is controlled by a selector push-button at the operator's control panel. Interlocks are provided to prevent the rotation of each tippler unless the tippler chute drop plate is in the "Coal" position and the coal conveyor is running, or the drop plate is in the "Redd" position and the redd conveyor running. The coal and the redd are discharged from the two tub tipplers through their respective chutes on to either of two 15 h.p. scraper chain feeder conveyors running at a chain speed of 20 ft./min.

Pneumatic ram equipment, with rams 4 in. dia. x 13 ft. stroke, is fitted to a special platform beyond the empty tub traverser carriage at the level of both upper and lower decks of the cages. This ram equipment is fitted with the necessary in-line valves, main control valves and interlocks to enable the banksman, who operates the control valves, to ram the empty tubs off the traverser carriage into the cage, thus pushing the full tubs out of the cage and on to the full tub traverser carriage.

Similarly, a special platform is mounted beyond the full tub traverser carriage in line with the tippler platform, on which pneumatic rams are fitted at the level of both upper and lower tipplers, complete with the necessary control valves to enable the traverser operator to ram the full tubs off the traverser carriage on to the tipplers, thus pushing the empty tubs on to the empty tub traverser carriage, to be carried back again to the shaft. Apart from the tubs travelling in the cages in the shaft, only four tubs are required for normal operation of the pithead tub circuit.

The pit redd is delivered on to a 10 h.p. MECO troughed belt conveyor running in a culvert below pithead floor level to the end of the building, whence it is carried by a similar belt conveyor of 15 h.p., 134 ft. long, into a 100-ton capacity hopper, fitted with twin air-operated quadrant door discharge chutes. The redd from this hopper is transported by Foden 10 cu. yd. heavy duty dump trucks to the pit about 1½ miles distant.

### COAL MOVEMENT

The run-of-mine coal from the tipplers is delivered by two 10 h.p. MECO troughed belt conveyors, 224 ft. and 175 ft. long respectively, operating in tandem, to a reinforced concrete 12-ton surge hopper within the Lingerwood loading station building. The surge hopper is fitted with a quadrant door, hydraulically controlled by Keelavite 8 in. x 1½ in. double acting ram with control valve at the operator's platform. A pneumatic ram with control valve is also fitted to the quadrant door for emergency operation in the event of failure of the hydraulic control system.

At the loading station the train of 10 empty cars is pushed by the locomotive into the empty car siding until the leading car engages with the axle catches on the empty car creeper. The locomotive is then detached and the train is fed forward as required by means of the creeper, which has a chain speed of 20.2 ft./min. When the leading car has passed over the creeper, it is uncoupled by the operator and gravitates

on to the traverser approach armbrake, where it is held until the car traverser is ready and proved in line with the empty track. The operator then releases the armbrake and the empty car gravitates on to the car traverser platform where it is brought to rest by means of a buffer armbrake and a spring-loaded wheel catch. The traverser carriage then moves over automatically until it comes into line with the full car track and the carriage platform is tilted by a hydraulic ram, causing the empty car to gravitate off the traverser and run forward to couple automatically on to the rear of the train being filled at the loading chute. A full car creeper, chain speed 6.9 ft./min., is used to feed the train of cars forward under the loading chute. When a train of ten full cars has been gathered, it is taken away by the locomotive to the Lady Victoria tippler station.

The car creepers, manufactured by Beckett and Anderson Ltd., are driven by 7½ h.p. motors through worm reduction and epicyclic gear, with clutch and brake operated by Keelavite hydraulic control from hand-operated control valves on the operator's platform at the loading chute.

The traverser carriage is operated by a fixed driving gear through a crank arm mechanism which enables the carriage to register accurately with the empty and full tracks. The traverser equipment was designed and manufactured by Strachan and Henshaw Ltd., with Igranite electrical control gear and Fraser hydraulic control equipment.

### SURFACE TRANSPORT TRACK

The original surface transport system consisted of a 2 ft. gauge endless rope haulage between Lady Victoria Colliery and Lingerwood Colliery and a second similar haulage between a junction on the first haulage and Easthouses Colliery. From Lingerwood to Easthouses, a distance of about 2,300 yd., this endless rope haulage ran straight and practically level on a private fenced track, and this alignment was used for the new loco haulage track. On this section the new 3 ft. 6 in. gauge single track was laid by interlacing the new track in the existing 2 ft. gauge double track during the Trades Holidays, 1954, and at week-ends when the haulage was not operating. At the Lingerwood junction a large cutting had to be excavated and a new road bridge built to suit the new track arrangement. The work was complicated by having to keep the endless rope haulage, with its turns, tunnels and junctions, and the standard gauge service railway, operating until the last moment.

Between Lingerwood Junction and Lady Victoria Colliery, the original 2 ft. gauge double track ran parallel to the standard gauge private branch line on an embankment. The rearrangement of the transport system required the standard gauge line to be transferred to the alignment of the tub track and the new 3 ft. 6 in. gauge track to be laid on the alignment of the standard gauge track.

The total length of track laid for the new transport system is 2.8 miles. The maximum track gradient is a downgrade of 1 in 70 in favour of the full trains between Lingerwood Junction and Lady Victoria tippler station.

The 10-ton capacity cars used for the transport of the run-of-mine coal are of the solid bottom type, manufactured by the Distington Engineering Co. They do not have any brakes fitted, as they are under control of the loco or track brakes on all gradients. R. S. channel creeper engagement brackets are fitted alongside the axles at both ends of the cars for engaging the car handling equipment. A total of 70 cars is sufficient for the normal operation of the surface transport system, but it is proposed to increase the number of cars to 100 to give additional car capacity for use in emergency.

Locomotives are Hunslet 100 h.p., 15-ton mine diesels.

## TECHNICAL BRIEFS

### New Material Joins Metal to Metal

A new material, called Devcon, the Plastic Steel, is a combination of 80 per cent steel and 20 per cent plastic. It can be purchased by the tin. It is a product of the Devcon Corporation and is being marketed in the U.K. by E. P. Barrus (Concessionaires) Ltd.

Devcon is forwarded as the only known material which will add metal to metal. It can therefore be used to build up worn or broken parts, and so cut machinery replacements to a minimum or salvage losses on production errors. It will make a forming die in two or three hours; and a holding fixture which might normally take 12 hours to make of steel can be made with Devcon in 15 working minutes without the aid of machinery.

Devcon is easy to handle and all that is needed is to add the special hardening agent to the plastic-steel mixture, stir with a screwdriver and then press or pour it in the shape desired. In its unmixed state it will last indefinitely. When it sets it becomes a permanently tough and rigid metallic piece. If speed is essential, heat from a blowlamp or an infra-red lamp will harden it in seconds.

Shrinkage during hardening is approximately 0.0005 per in.; high compression strength—over 18,000 lbs. per sq. in.; tensile strength over 15,000.

### Checking Anodic Oxide Film

The thickness and density of the anodic oxide film which is deposited electrolytically on aluminium and light alloys have to be carefully checked, because they must be uniform if the film is to give efficient protection. A widely used method of checking these characteristics is based on determination of the electrical voltage which, applied to the film acting as dielectric, generates a discharge and resultant perforation of the film. This method, however, has its drawbacks, since the film is not pierced distinctly and there is sparking which influences and often makes the measurement unreliable.

The Istituto Sperimentale di Metalli Leggeri di Novara, Italy, according to *Aluminio*, has eliminated these drawbacks by developing a method of checking the thickness and density, based not on measuring the perforation voltage, but the voltage which sets up a given flow of current, determined at a very low value, through the anodic oxide film.

The voltage measured in this way is taken as the conventional perforation voltage value. In practice, since with this method a voltage corresponding to a given current value is measured, actually it is the electrical resistance of the anodic oxide film that is determined, and for this purpose a special type of measuring equipment called I.S.M.L. Resistometer has been built. This unit is unusually precise and sensitive, particularly in measuring the density of the film which is so important a factor of its corrosion resistance. The equipment is easy to handle and use and does not cost more than other precise checking equipment. The originality of this new process lies in the adoption of a very low reference current, of the order of micro-Amperes, thus avoiding sparking and hence achieving greater precision and more repeatable results.

### Tensile Tests of Beryllium

Beryllium samples of different grain sizes, prepared by various methods (rolling or extrusion) were tested in tension at a constant strain rate of 800 per cent per hour from 78 to 1,550 deg. F. temperature at Westinghouse Research Laboratories. It was shown that below 900-1,000 deg. F. beryllium fails by cleavage, above 1,400 deg. F., by intercrystalline cracking. Between 900 deg. and 1,400 deg. F. there is a gradual change in the proportion of the area of fracture resulting from each of these two mechanisms of rupture which in the case of beryllium differ considerably from that of ductile face-centered or body-centred cubic metals.

## REVIEWS

**The Statistical Yearbook, 1955.** Published by The United Nations and available from H.M.S.O. Price 40s. paper-bound and 45s. clothbound.

In 1954, the factories and mines of the world, excluding the U.S.S.R., Eastern Europe and China mainland, were producing nearly twice as much as in any pre-war year. The world's railways were hauling almost twice as much freight, the world's ships were carrying about 50 per cent more goods, and there were twice as many motor vehicles on the roads of the same defined area in 1954 as in 1938, according to the 1955 issue of the United Nations Statistical Yearbook, published recently.

This seventh issue of the U.N. Statistical Yearbook was prepared by the Statistical Office of the United Nations with the active co-operation of the statistical authorities of nearly 150 countries and with the assistance of the United Nations specialized agencies and other inter-governmental bodies. The 183 tables of this 644-page bilingual (English and French) volume provide international statistics on demographic, economic, financial, social and cultural subjects and generally cover a 20-year period ending with 1954 or mid-1955. The territorial coverage of the Statistical Yearbook may be gauged from the fact that nearly 250 geographical areas are listed in the country index.

**Unkra in Action.** Published by the United Nations Department of Public Information. Available from H.M. Stationery Office. Price 30c. or equivalents.

By the end of 1956, more than \$140,000,000 worth of aid will have been provided through the United Nations Korean Reconstruction Agency (Unkra) to help rebuild the economic and social life of the Republic of Korea.

An illustrated account of the nature of this assistance is given in a new publication entitled *Unkra in Action*. It shows what is being done to rehabilitate agriculture in the Republic, to construct irrigation projects, to restore the country's forests, the fishing industry and industry generally. About \$38,000,000 has been earmarked by the United Nations Agency for industrial projects and raw material imports. Coal mining is being improved, with the aid of both equipment and technical advice by experts obtained through the Agency.

Also described in the publication are various ways in which the Republic's educational system is being helped to revival.

**Quin's Metal Handbook, 1955 Edition.** Published by Metal Information Bureau Ltd., Birkett House, 27 Albemarle Street, London, W.1. Pp. 720. Price £1 5s. 6d., post free.

The new issue, which is the 42nd edition, contains extensive data relating to prices, production, consumption, exports, imports, brands and stocks of a very wide range of ferrous and non-ferrous metals. It includes Italian non-ferrous yearly average price data since 1948, more extensive coverage of light metals—including titanium—and of minor metals and nickel including a new table on world nickel ore output. Additional statistics have been added to the sections on non-ferrous ores, precious metals, iron and steel, tinplate, ferro-alloys and iron and steel scrap. Notes on minor metals and non-ferrous ores have been revised and brought up to date. Weight tables of titanium products have been added.

**Metal Statistics, 1956.** Published by American Metal Market, 19 Cliff Street, New York 38. Pp. 844. Price \$3.50 in U.S. and Canada. Other countries \$5.00, post paid.

Both in presentation and arrangement of contents, this edition incorporates a number of changes which enhance its value as a convenient reference book. Statistical coverage of the ferrous and non-ferrous metal industries has again been appreciably widened in scope. Among statistical tables not previously presented are such subjects as Titanium Ingot and Mill Product Shipments, World Mine Production of Nickel, The Use of Tin and Lead in Solder, and the Production of Manganese Ore.

## MINING MISCELLANY

According to the New China News Agency, adequate iron ore deposits have been discovered around Anshan, Southern Manchuria, to support its steel industry until the end of the century.

The M. A. Hanna Co., of the U.S., is seeking an exploratory concession in Ethiopia. Talks have been held with the Ethiopian government regarding long-term, exclusive exploratory rights over a large area, but no agreement has yet been reached.

Widespread adoption of diesel-electric power systems for oil well drilling rigs is predicted by General Electric's locomotive and car equipment department. Advantages cited are fast drilling at low cost, portability, low maintenance, high efficiency, and safety in operation.

South African Minerals have granted an option to Johannesburg Consolidated until October 15 to survey their mining activities with a view to taking over the management and acquiring a financial interest. The company's principal interests are manganese in South-West Africa and chrome in the Transvaal. Nickel in the Rustenburg area has also been mentioned in previous reports.

On the left bank of the Vistula, near the village of Piaseczno in Kielce voivodship, Poland, work is being conducted on a small open-cast mine to exploit a deposit of natural sulphur. This experimental mine will make it possible to construct a large open-cast sulphur mine being designed by Soviet experts. The sulphur was discovered at a depth of about 15 metres at the end of 1955. It is a continuation of a deposit at Tarnobrzeg, Rzeszow voivodship, which is 50 metres deep.

Mount Isa Mines will send its service manager, Mr. J. W. Redpath, to Britain and the U.S. to investigate the possibility of building Australia's first private enterprise atomic power station at Mount Isa, in North-West Queensland. This decision has been prompted by the fact that coal for the company's existing Mount Isa power plant has to be hauled 760 miles from the coast and costs £A8 a ton by the time it is delivered. The company has been assured of full government technical aid, but will have to buy the plant itself.

The Eire Minister for Industry and Commerce, Mr. Norton, has received proposals for exploration of copper deposits in the Skibbergreen-Schull-Crookhaven area of Co. Cork. The proposals are being examined with a view to the granting of prospecting licences to the applicants. A number of old copper workings exist in these areas, notably in the Roaring Water Bay district. The mines have not been worked for more than 50 years. They were considered to be low grade deposits, but fairly extensive.

Construction of the second power plant on the Laurie River, Canada, to double the supply of power available at Sherritt Gordon's Lynn Lake mines is proceeding according to schedule. It is planned to have the new plant in operation late next summer or early in the autumn. Tonnage will be increased at the mines and ore grade brought down to mine average. The objective is to produce 10,000 tons of nickel a year, plus accompanying copper and cobalt, without mining an undue proportion of the better grade ore in the El mine.

The five diamond drilling rigs brought from Canada to Eire by Can-Erin Mines Ltd. are now in operation on the various properties of the company's subsidiaries. The heaviest rig, which can drill to a depth of 3,000 ft., is being used to intersect the high grade copper zone below the deepest working in the Allihies Mines at West Cork. A second rig is in operation in the same workings. Two additional surface drills are operating at the Beauparc, County Meath, copper mines, which are the responsibility of the Irish Mining Corporation, one of Can-Erin's subsidiaries. De-watering operations are continuing at both Beauparc and Allihies.

The Texas Co. and New Jersey Zinc Co. have jointly purchased the Happy Jack mine in Utah from the Bronson & Cooper Mining Co. Neither the size of the mine nor the price paid has been disclosed. Both concerns have also announced a contract with the U.S. Atomic Energy Commission for the construction and operation of a uranium processing mill to be built at Mexican Hat, Utah, on land leased from

the Navajo Indian tribe. Construction of the processing mill has already begun and is scheduled for completion in September, 1957.

### PERSONAL

Mr. H. J. Randall, C.B.E., formerly chairman of the London Electricity Board, has been appointed a director of Enfield Cables Ltd. On October 1, 1956, he will assume the chairmanship of the board in place of Sir Philip Warter, who relinquishes it at his own request but will remain a director of the company.

An International Diplomatic Conference will be held in Lisbon in the autumn of 1957 to revise the International Convention for the Protection of Industrial Property. The convention covers patents, trademarks, designs, trade names and protection against unfair competition, and is now in force between 52 countries.

### CONTRACTS AND TENDERS

#### Union of South Africa

The International Co-operation Administration (I.C.A.) has announced the following procurement for South Africa. 25 tractors in accordance with specification Auto 11/56. 50 semi-trailers in accordance with specification Auto 11/56. Stores Department, South African Railways. Closing date 21/9/1956. Ten. 20591. Ref. E.S.B./19492/56. Enquiries to Chancery 4411, Extension 738 or 771.

#### Belgian Congo

The International Co-operation Administration (I.C.A.) has announced the following procurement for the Belgian Congo. 42 tractors. Ten 20583. Tractor on pneumatic tyres with diesel engine of 25 to 30 h.p. at pulley operating commercial gas oil, 42 rotary cutters (scrub clearer) to be employed with tractor. 23 tractor-drawn rollers. Issued by the Ministry of Colonies, Brussels, and the Government General, Leopoldville. Specification No. 942. Closing date 23/8/56. Ref. E.S.B./18486/56. Telephone Chancery 4411, Extension 738 or 771.

#### India

The International Co-operation Administration (I.C.A.) has announced the following procurement for India: Two air compressor sets of 210/250 cu. ft. per min. capacity. Speed 750/870 r.p.m., working pressure 100 lbs. p.s.i. Should be equipped with fan-cooled intercooler automatic unloading device, safety valve for intercooler, pressure gauges for intercooler and oil pressure and intake air filter. Preferably V-belt drive of electric motor at 400/440v. 3 ph. 50 cycles A.C. supply. Issuing authority the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. Ten. 20593, 3/8/56. SPIA/15061—G/IV. Closing date 5/9/56. B.O.T. ref.: E.S.B./19572/56. Telephone Chancery 4411, Extension 738 or 771.

Messrs. D. McL. Wallace Ltd., P.O. Box 9010, Newmarket, Auckland, have informed the United Kingdom Trade Commissioner at Auckland that they would like to receive literature, prices, etc., from United Kingdom manufacturers of pumps who are not represented in New Zealand, with a view to negotiating with them for their New Zealand agency. They would like to increase the range of pumps they can offer and wish to get into touch with manufacturers of standard centrifugal pumps up to 8 in. or 9 in. suction dia., also with manufacturers of larger special purpose pumps.

Sheepbridge Engineering Ltd. announce that agreement has been entered into with Gebr. Eickhoff Maschinenfabrik u. Eisengiesserei, m.b.h., Bochum, Germany, for the manufacture at the Chesterfield Works of Sheepbridge Equipment Ltd. of components for the well known Eickhoff Steel Plate Mining Conveyors. Sales of Eickhoff Conveyors will be handled by W. Stanley Jones (Engineers) Ltd. of Altringham, Cheshire, and E. Wheatley, Ltd. of Sheffield, as at present.

Petters Ltd., Staines, have purchased all rights in Coborn petrol engines from K and L Steelfounders and Engineers Ltd. The manufacture of these engines has now ceased. Spares and service will continue to be available throughout the world. They will be supplied in future by Petter McLaren Service Ltd., Burton-on-the-Wolds, Loughborough, and in most territories will be available from the former Coborn agents.



## METALS, MINERALS AND ALLOYS

**COPPER.**—Although the market weakened on Wednesday in London, copper had been extremely firm on both sides of the Atlantic during the past week. On the whole it has been the London market that has set the tone although London's view of the American scene (which has not been at all the same as the Americans' own view of it) has been an important factor. The strength of the rise has surprised a good many observers—copper on August 7 went over £325 in London—because of the incidence of the holiday season and the strike at the B.M.C. factories. In fact, the holidays are half way through and plants are preparing for the long haul before Christmas. Also, the fact that the B.M.C. strike coincided with the holiday break much reduced its significance as a market factor.

The bullish factors on the other hand have been considerable. First of all the view in London of American prospects is distinctly bullish and one of the reasons for the rise was the belief that copper consumption would rise in the United States sharply now that the steel strike is over. A new advertising campaign is to be launched in the United States to promote copper consumption and it may be that London is counting American chickens before they are hatched. At any rate, the Americans do not take quite such an optimistic view of their own affairs and the copper companies are at pains to point out that they are producing more copper than they are currently selling. However, under the influence of London the American custom smelters have gradually raised their price to 39.75 c. per lb. just under the big producers' price of 40 c. No. 2 scrap copper has also advanced up to 34 c. It appears that quite a fair business is being done at that level.

The second and most influential cause of the rise has been the Suez Canal affair. Directly, copper is little affected by the Suez Canal since it does not lie on any of the routes between the main producing and the main consuming area. Last year over 100,000 tons of copper and copper products went through the Canal but too much has been made of this fact. Much of this copper is making the journey twice and Australian copper on its way to European refineries could go round the Cape with little extra mileage—even slower ships would lose only about half a journey a year, from four to three and a half, and the faster ships would not lose this. The effect of the dispute on copper is entirely indirect but it is none the less real for that. Any interference with the Canal would create a shipping shortage which the copper shippers would feel along with the rest. There is always the possibility of further requisitioning of shipping and, if supplies were to be interfered with, of some form of copper allocation. It is against contingencies of this kind that consumers in most European countries have been stocking up. Sir Anthony Eden's speech made it clear that Britain cannot compromise on free navigation of the Canal. Col. Nasser's reaction is now awaited.

The third reason for the firmness is unrest on the Copperbelt. The strike at Roan Antelope, which began on August 2, ended on August 6 but the last has not been heard of this dispute on the compulsory transfer of the better paid miners to the Staff Association. If a further outbreak were to coincide with interference with Canal shipping then a squeeze comparable with that of last autumn would be in the making. Incidentally, when London copper was on the upturn and reaching £325 the possibility began to emerge that Chile would ask for her copper to be priced on the L.M.E. quotations again. London is more susceptible to trouble in Rhodesia and Suez than the United States and the possibility of London standing clearly above the 40 c. equivalent still cannot be ruled out.

Meanwhile, a strike that was threatening at Anaconda's Potrerillos mine, because the company had not granted the 100 per cent wage increase demanded, has now been averted by the grant of an increase of 55 per cent and other benefits, according to Comtel. It is not clear whether the government agreed to this increase and if so what has happened to its price and wage freeze.

Phelps Dodge Refining Corporation has reached agreement with the United Steelworkers on a three-year wage agreement which will cost the company over 30 c. an hour over the period. Agreements have still to be made at Kennecott's refinery at Garfield and American Smelting and Refining Company's smelter also at Garfield, but these are not expected to cause difficulty.

A Bureau of Mines report states that copper concentrates in commercial grades can be obtained from four Alaskan mineral deposits. They are: Moth Bay Mine in Revillagigedo Island; Threeman Mine, Port Fidalgo area; Golden Zone Mine near Colorado station; and Kathleen-Margaret Prospect near

Paxton. Much of America's new production is guaranteed by the government so it is not clear how "commercial" a commercial deposit has to be.

A new copper mine has been opened at Kurbesh in Northern Albania, according to an official Albanian report.

**LEAD.**—The lead market has had an excellent week with good business passing and the undertone of the market firm at 16 c. per lb. New York. Storage battery makers were in the market for big tonnages and the battery season is now approaching its climax; a revival of the automobile industry would even enhance this call still further. (The reported agreement between Curtiss-Wright and Studebaker-Packard to revitalize the latter concern could also make an impression on the market.) In addition the demand for lead, particularly for construction, has improved since the ending of the steel strike. Cable makers, pipe and sheet makers and those producing caulking materials and solders were all making sizeable purchases. Given this sort of buying over a few weeks and lead could be in for a rise. Furthermore, the government has announced that it is preparing to buy more foreign lead and zinc by bartering farm surpluses. Two new restrictions may lessen the amount offered: the metal must be smelted and processed at foreign plants, and it will have to be delivered within 60 days of contract. Already the government has acquired 35,000 tons of lead in this way.

**TIN.**—Tin moved irregularly in the United States last week with the cue being taken all the time from London; subsequently the market turned distinctly stronger. What has been surprising about the market's behaviour has been its readiness to turn bearish at the least prompting. The news from Malaya is slightly more reassuring in that the threatened strike has been put off time and time again—but there is still no news of a genuine settlement and the cloud still hangs over the industry. Similarly, the market has not been influenced excessively by the Suez affair although tin is the most directly affected of the major non-ferrous metals. Finally, there has been no really sharp reaction to the settlement of the strike in the American steel industry. Tin in New York is now back at only a fraction below \$1 per lb. It may be thought that it is highly priced at this level; but if the unsettling factors persist while the Texas smelter continues to remove the world surplus it is difficult to see the price going lower.

An event, the full consequences of which cannot be foreseen, was the decision of Indonesia to repudiate her debt to Holland. This can only harm Dutch-Indonesian commercial relations and they are already pretty strained. Dutch capital does not look particularly safe in Indonesia (neither does anybody else's for that matter) and there will be renewed efforts to pull it out by whatever device. In the circumstance it is an interesting speculation on how long the Indonesians will continue to have their tin smelted at Arnhem. For the present it suits them and there is no reason to suppose they want it disturbed. But the aggressive nationalism of the Indonesians may make commercial relations with Holland quite impossible. If Indonesian tin were not smelted at Arnhem where could it be smelted? Is the idea of Texas too fantastic? Incidentally, Indonesia is chronically short of dollars.

It is reported from Malaya that the Eastern Mineral Trading Company, a Malay-Japanese concern, has been offered a loan of 500,000 Malayan dollars by Japanese investors.

Malayan shipments of tin in July were 5,846 tons.

The Amalgamated Tin Mines African Workers' Union has decided to suspend temporarily the strike action due to begin on August 13.

**ZINC.**—Zinc demand was slow in the United States last week but in the last few days there has been a discernible quickening. Demand for the special high grades has remained extremely quiet as it has been for months past. The demand for prime western grade was weak in comparison with the brisk trade in lead but the quotation at East St. Louis remained 13.50 c. per lb. The interest of the galvanizers has not been aroused by the end of the steel strike but it is expected to grow in the coming weeks. The metal will, of course, be helped by the decision to stockpile more foreign zinc; about 100,000 tons has already been bought.

However, shortly after this welcome news was announced the July zinc statistics were released in the United States and were in some respects even more depressing than had been expected. United States production of zinc in July reached 83,080 tons against 78,454 in June. At the end of July, stocks

of slab zinc had rocketed to 103,253 tons against 69,704 at the beginning of the month. Stocks of special high grade rose by about 10,000 tons and of prime western by a little over 20,000 tons. July deliveries were also well down at 49,531 tons compared with 68,327 in June. This fall was entirely due to a fall in domestic deliveries from 52,703 tons to 34,219 tons. Government stockpiling accounted for 14,501 tons.

**ALUMINIUM.**—Negotiations to settle the week-old strike against the Aluminium Company of America are still proceeding, but Union officials remain hopeful of an early settlement of the contract dispute.

The striking Union, the United Steelworkers of America, represents 18,000 Alcoa strikers and about 10,000 from the Reynolds Metal Company, which is expected to follow any settlement pattern set by Alcoa.

From Richmond, Virginia, comes the report that the Reynolds Co. has reached an agreement covering 6,000 of its employees represented by the Aluminium Workers International Union. The settlement was similar to one negotiated last week by Alcoa and the A.W.I.U. for 10,000 Alcoa workers represented by that Union.

**MAGNESIUM.**—A second commercial producer of magnesium will soon enter the field in the U.S., adding 15 per cent to the nation's commercial capacity. Known as the Alabama Metallurgical Corporation, the new company is owned jointly by Brooks and Perkins, of Detroit, the largest producer of magnesium products in the U.S., and Dominion Magnesium Ltd., of Toronto, Canada's largest producer of magnesium ingot. A \$7,000,000 plant is to be constructed in Selma, Alabama, and will have an annual production capacity rated at 10,000 tons. Operations are expected to start next year. The plant will be located on a 480-acre site above a large deposit of dolomite and close to low cost fuel in the form of natural gas from nearby fields. The metal will be made by the ferro-silicon process applied to the dolomite rock. An electrolytic process is used by the Dow Chemical Company at Freeport and Velasco, Texas, for the extraction of magnesium chloride obtained from seawater. The use of magnesium has been increasing steadily. Mr. E. Howard Perkins, chairman of Brooks and Perkins and chairman of the board of the new company, predicts that, at the present rate of expansion, monthly use will equal total present monthly capacity in 18 to 24 months. The only other major producer of commercial ingot in the U.S. is the Dow Chemical Company.

**MANGANESE.**—The General Services Administration of the U.S. Government announced that it had extended the defence production programmes on manganese, mica and beryl. The manganese programme will be extended from June 30, 1958, to January 1, 1961, and the purchase ceiling has been raised from 19,000,000 Lton units to 28,000,000 Lton units, the termination of the programme to occur whichever is reached first. The mica programme has been extended from June 30, 1957, to June 30, 1962, with no change in the ceiling. The beryl programme has been extended from June 30, 1957, to June 30, 1962. The limitation on deliveries has been raised from 1,500 s. dry tons to 4,500 tons, termination to occur whichever is reached first. In each programme, the period of participation has been lengthened from June 30, 1956, to June 30, 1958.

**VANADIUM.**—Following requests by industry and by several Federal Agencies, the U.S. Bureau of Mines has resumed and modified its reports on vanadium. The new monthly vanadium series, covering consumption and foreign trade, replaces a quarterly report which was last issued in 1947. It is revealed that domestic consumption in January, 1956, at 309,446 lb., was 9 per cent greater than the average monthly rate in 1955. High-speed steel and other alloy steels accounted for 254,273 lb., alloy cast iron for 5,251 lb., non-ferrous alloys for 29,022 lb., and chemicals for 11,582 lb.

**WOLFRAMITE.**—A new chemical process is reported from Portugal which makes it possible for the concentration of wolframite and scheelite to be undertaken nearer the mines. This may have far-reaching consequences for the industry. Meanwhile Portugal's wolfram exports are running at a slightly lower level than in 1955, though prices have made some recovery since last year, when they were nearly 50 per cent lower than in 1953. The present downward drift in wolfram ore shipment prices still continues. Fresh European demand is reported to be slow and most consumers appear to be waiting for still lower prices.

**DIAMONDS.**—In his Diamond Market Report, June, 1956, Mr. Johan J. Smit, Sr., refers to the difficulty now being encountered by his firm in obtaining, without much extra effort, the necessary diamonds for the smooth operation of its business. In Europe there appears to be an extensive black market,

since bona-fide export to countries behind the Iron Curtain is not possible, and prices of diamonds are far beyond their intrinsic value. "We can understand the reason for the rumours spread about the discovery of large diamond mines in Siberia," states Mr. Smit, "but so far, no one outside of the Iron Curtain has received invitations for inspection of these 'discoveries'." At a recent meeting in New York, it was decided by the representatives of the various firms of J. K. Smit and Sons to send a letter to each diamond group and organization, pointing out that it is the small dealers especially who are hardest hit by this speculative buying. It was also pointed out that stockpiling through exchange of wheat for diamonds might soon cease.

## THE LONDON METAL MARKET PRICES

On Thursday morning the Eastern price for tin was equivalent to £78½ per ton c.i.f. Europe.

Closing prices and turnovers for four days are given in the following table:—

	August 2		August 9	
	Buyers	Sellers	Buyers	Sellers
Copper				
Cash	£314½	£315	£318½	£319
Three months	£313½	£314	£317½	£318
Settlement		£315		£319
Week's turnover		7,050 tons		6,275 tons
Tin				
Cash	£765	£767	£773	£775
Three months	£760	£762	£770	£771
Settlement		£767		£775
Week's turnover		1,570 tons		405 tons
Lead				
Current half month	£116½	£117	£117½	£118½
Three months	£115	£115½	£115½	£116
Week's turnover		5,675 tons		3,275 tons
Zinc				
Current half month	£96	£96½	£97½	£98
Three months	£94½	£95	£95½	£96
Week's turnover		2,825 tons		4,650 tons

## OTHER LONDON PRICES—AUGUST 9

### METALS

Aluminium, 99.5%, £190 10s.	Magnesium, 2s. 4d. lb.
per ton	Nickel, 99.5% (home trade)
Antimony—	£519 per ton
English (99%) delivered, 10	Osmium, £24/27 oz. nom.
cwt. and over £210 per ton	Osmiridium, nom.
Crude (70%) £200 per ton	Palladium, £8 0s./£8 10s. oz.
Ore (60%) bases 23s. 6d./	Platinum U.K. and Empire
24s. 6d. nom. per unit, c.i.f.	Refined £34/£35 oz. Imported
Bismuth	£37 10s./£38 10s. nom.
(min. 1 ton lots) 16s. lb. nom.	Rhodium, £42.
Cadmium 12s. 0d. lb.	Ruthenium, £15/£17 oz.
Chromium, 6s. 11d. lb.	Quicksilver, £84 0s.
Cobalt, 21s. lb.	ex-warehouse
Gold, 251s. 8d.	Selenium, 112s. nom.
Iridium, £29/31 oz.	per lb.
Manganese Metal (96%-98%)	Silver, 78½d. f.oz. spot and
£259/£265 according to	78½f.d.
quantity	Tellurium, 15s./16s. lb.

### ORES, ALLOYS, ETC.

Bismuth .. .. .	50% 7s. 3d. c.i.f.
Chrome Ore—	40% 6s. 3d. lb. c.i.f.
Rhodesian Metallurgical (semi-	
friable) 48%	£16 15s. 0d. per ton c.i.f.
Hard Lumpy (45%)	£16 15s. 0d.
Refractory 40%	£10 15s. 0d. per ton c.i.f.
Smalls 42%	£13 15s. 0d. per ton c.i.f.
Baluchistan	£17 5s. 0d. c.i.f.
Magnesite, ground calcined	£28 0s./£30 0s. d/d
Magnesite, Raw (ground)	£21 0s./£22 0s. d/d
Molybdenite (85% basis)	8s. 2½d. nom. per lb. (f.o.b.)
Wolfram and Scheelite (65%)	247s. 6d./252s. 6d. c.i.f.
Tungsten Metal Powder	20s. 2d. nom. per lb. (home)
(98% Min. W.)	
Ferro-tungsten (80%-85%)	17s. 2d. nom. per lb. (home)
Carbide, 4-cwt. lots	£41 3s. 9d. d/d per ton
Ferro-manganese, home	£66 per ton
Manganese Ore Indian	
Europe (46%-48%) basis 125s.	
freight .. .. .	105d./106d. nom. per unit c.i.f.
Manganese Ore (43%-45%)	98d./99d. nom. per unit c.i.f.
Manganese Ore (38%-40%)	92d. nom. per unit
Brass Wire	3s. 1½d. per lb. basis
Brass Tubes, solid drawn	2s. 6½d. per lb. basis



## COMPANY NEWS AND VIEWS

### High Values From Bancroft Drilling

A progress report from Bancroft Mines covering operations for the six months to June 30, 1956, has disclosed high copper values obtained from boreholes drilled on the southern extension of Kirila Bomwe South Orebody.

In hole KLB 47 a true width of 25 ft. was intersected at a depth of 502 ft. assaying 7.04 per cent total copper which included 1.24 per cent oxide. Cobalt values of 0.027 per cent was also present. In another hole, KLB 52—situated approximately 1,000 ft. south of KLB 47—a true width of 25 ft. was intersected at 389 ft. This showed 6.03 per cent copper of which 2.57 per cent was oxide. Cobalt values were 0.067 per cent. Drilling in hole KLB 53—1,000 ft. south of KLB 52—gave 4.61 per cent total copper from a preliminary assay. The width of ore intersected was 8.5 ft. at a depth of 774 ft. A proportion of 0.52 per cent oxide copper was disclosed but no cobalt.

Considerable underground progress has been achieved during the six months and in addition to the No. 1 shaft (Kirila Bomwe South Orebody) and No. 2 shaft (Konkola Orebody) being sunk to their final depths, at present envisaged, a good deal of underground development was accomplished.

At No. 1 shaft a total of 10,457 ft. of development was driven. Although progress was retarded by water, by the end of June two winzes being sunk from the 400 ft. to the 600 ft. levels had reached the grizzly level above 650 ft. haulage. They were then stopped to await holing through from below. Due to the necessity for cementation in water-bearing conglomerate, development on the 650 ft. level has, however, been delayed. Nevertheless, by the end of June 650 ft. haulage was nearly through the water zone and it is anticipated that a holing between this level and the winze from the 400 ft. level will be accomplished early in the third quarter of the current year.



The No. 1 Shaft Area, Bancroft Mines. Behind the concrete headframe are the temporary central offices. To the rear are the switching station and the clearing for the power line

At No. 2 shaft a successful system was evolved for developing through the mud zone at 300 ft. and work proceeded satisfactorily on the main haulage in the footwall of the orebody on that level. On the 550 ft. level, a crosscut from the station entered the same mud zone but by using the technique developed on the upper level, this haulage was enabled to advance satisfactorily. No water problems were reported from the No. 2 shaft area which, in contrast with other sections, has proved to be relatively dry.

It will be recalled that the planned production rate for Bancroft, originally set at 42,800 tons of copper per annum as from January, 1957, was revised in January, 1955, to 85,600 tons by the beginning of 1960. This enormous increase in output was presumably based upon the company's ore reserve position as published in the report and accounts for the year 1955 which revealed that a total of 92,000,000 tons containing 3.67 per cent copper were available. It is, of course, far too

early as yet to attempt any estimate of how the latest drilling disclosures from Kirila Bomwe south orebody could affect future overall grades at the property and a good deal of further drilling and underground development naturally remains to be done before the true significance of these results can be assessed. It should be recognized how good are these widths and values. Moreover, the fact that the deposits lie at extremely shallow depths makes their eventual exploitation a most attractive proposition. But whether or not further drilling will prove that further ore exists near enough to the surface for opencast operations (as at Nchanga) must, however, remain one of the intriguing questions for the future. Meanwhile, if no account is taken of future increases in output which might take place, Bancroft 5s. units at 52s. seem to be reasonably valued. This assumption is based upon an average price for copper of no more than £300 a ton.

### Klerksdorp's Uranium Position

The Secretary for Mines of the Union of South Africa has notified Klerksdorp Consolidated Goldfields that its application to become a uranium producer on a moderate scale cannot now be accepted. The reason given was that the uranium production programme under which the application was originally framed had been filled. In directing the company's attention to a release recently made by the United States Atomic Energy Commission, the Secretary stated: "Your company may now desire to reconsider its application in the light, not only of this release, but also of further development results from the property, and to submit a fresh application."

Since the receipt of this notification a full circular on the position has been issued to shareholders. The circular emphasizes that the company is of the opinion that there are "reasonable grounds" for the submission of a new application. Accordingly, the chairman, Mr. Hedley Williams, is leaving by air for South Africa next Tuesday for discussions concerning the uranium future.

### Bremang to Transfer No. 4 Dredge Next January

In continuation of its transfer of operations from Ankobra River to the Extended Areas, it is Bremang Gold Dredging's intention to move its No. 4 dredge next January. If all goes well the transfer should be completed within six months. A similar move for No. 3 dredge will be made about November, 1958.

The company's balance sheet at December 31, 1955, showed an expansion of total assets to £768,466 from £724,728. Fixed assets at £376,440 remained little changed from the previous year's figure of £377,283 but current assets moved up sharply to £300,240 from £268,050. Current liabilities, however, declined to £98,514 from £301,526. These changes reflect an issue of £200,000 6 per cent Redeemable Debenture Stock (1961) which was taken up by the Western Selection and Development Company in commutation of its loans to Bremang.

During the past financial year the company made net profits of £62,779 compared with a loss of £7,130 during the preceding year. After payment of 5 per cent dividend which absorbed £12,123 (nil) the balance unappropriated rose to £44,050 from £1,517. Production of gold totalled 42,903 oz. against only 32,020 during 1954.

During the first six months of the current financial year ending December 31, 1956, a total of 17,551 oz. of gold has been recorded. While this compares with 19,633 oz. for the corresponding period of the previous year, it has been estimated that overall bullion output for 1956 will approximate to the 1955 figure. Operating profits of £44,514 show a decline from £47,085. Meeting, London, August 14.

### Kafir Market Quietly Steady Under Pressure

A more sober view of the Suez Canal situation, better news from the automobile industry, and the final settlement of the U.S. steel strike, were the key factors bringing about a recovery on Wall Street in mid week which raised *The Dow Jones Index* to 518.74 on August 8 after it had slumped to 513.88 earlier.

London is more directly concerned with the Suez and this, together with the weakness in sterling, lowered *The Financial Times Industrial Ordinary Index* from 183.4 to 179.5 by August 8.

Against this background golds experienced a thin time and although what selling took place was readily absorbed the

[illegible]

in grade took place at Free State Geduld which, together with an additional 2,000 tons milled, boosted profits by nearly £19,000.

Amongst Gold Fields Group mines, West Driefontein's result was particularly notable. At this property productivity moved up by 4,000 tons and costs dropped by 10d. Profits rose by over £35,000. Doornfontein increased throughput by 2,000 tons and profits by £7,000. Despite a fall of 2,000 tons, Harmony's profits improved due to lower costs per ton.

A fractional increase in mill grade took place at Blyvoor in the Central Mining Group bringing profits up by some £2,000. But at St. Helena—the Union Corporation mine—higher costs prevented any gain.

It was encouraging that Freddie's Consolidated in the J.C.I. Group was able to decrease its working loss by some £3,000 and costs by 1s. 1d. per ton. Responsible for this was a rise of 1,000 tons in throughput.

Company	July, 1956			Year ends	Current Financial Year			Year ends	Last Financial Year		
	Tons	Yield (oz.)	Profit (£000)		Tons	Yield (oz.)	Profit (£000)		Tons	Yield (oz.)	Profit (£000)
<b>Goldfields</b>											
Doornfontein...	7027,650	118-1	J		70	27,650	118-1		51	20,049	85-2
Libanon...	9921,787	54-2	J		99	21,787	54-2		100	21,235	60-3
Luipards V.I.a.	8515,136	12-6	J		85	15,136	12-6		90	17,329	16-4
Rietfontein...	26	5,825	17-3	D	182	41,178	126-8		185	41,556	36-7
Robinson...	8215,219	6-1	D		548	111,798	15-2		576	123,777	139-0
Simmer & Jack...	10217,978	17-8	D		712	123,875	111-4		834	139,604	121-2
Sub Nigel...	6719,950	64-5	J		67	19,950	64-5		67	21,237	85-5
Venterspost...	12729,655	72-6	J		127	29,655	72-6		125	29,056	71-0
Vlaakfontein...	4817,031	85-1	D		297	107,279	530-2		270	99,217	512-3
Vogels b.	10024,300	131-7	D		703	176,739	926-1		720	185,670	952-7
West Drie...	7569,376	566-9	J		75	69,376	566-9		71	54,398	436-1
<b>Anglo American</b>											
Brakpan...	10918,585	16-6	D		747	127,176	89-2		746	127,309	105-0
Daggas...	23252,227	299-6	D		1526	346,311	1959-0		1585	361,731	2224-0
East Daggas...	9615,725	34-0	D		669	110,085	247-9		673	112,172	329-0
F.S. Geduld c.	4217,217	64-9	S		263	95,244	270-4		—	—	—
Loraine d.	5310,335	112-3	S		451	77,239	1240-6		h	h	h
President Brand...	5844,391	369-1	S		534	121,554	3468-6		h	h	h
President Steyn...	9236,201	220-3	S		861	320,109	1822-3		h	h	h
S.A. Lands...	9520,904	82-6	D		623	127,422	406-7		663	125,064	391-5
Springs...	12715,328	8-6	D		881	107,386	76-1		833	109,946	57-1
Vaal Reef e.	4817,252	80-2	D		141	48,784	207-7		h	h	h
Welkom...	8921,182	54-2	S		840	183,013	298-0		h	h	h
Western Hlgs.	8135,034	222-5	S		764	302,483	1816-2		h	h	h
West Reef Ex.	12325,051	52-1	D		834	267,048	323-1		823	153,904	382-2
<b>Central Mining</b>											
Blyvoor...	10960,916	448-4	J		109	60,916	448-4		112	62,580	476-3
City Deep...	16231,121	3-0	D		1050	204,116	18-8		1124	212,929	112-3
Cons. M.R.	17223,886	10-4	J		172	238,660	10-4		180	24,972	25-6
Crown...	28443,182	15-0	D		2004	314,375	200-7		2092	336,034	348-7
D. Roodepoort...	18932,606	55-1	D		1270	219,014	359-8		1250	210,997	345-9
East Rand Prop.	22456,743	188-3	D		1474	381,701	1237-6		1487	355,543	1105-3
Harmony...	7831,201	173-1	J		78	31,201	173-1		63	22,669	110-4
Modder East...	14014,193	8-5	J		140	14,193	8-5		131	13,669	8-1
Rose Deep...	45	6,926	-4	D	309	50,087	8-0		419	65,354	52-4
<b>J.C.I.*</b>											
E. Champ. d'Orf	12	760	6-6	D	101	6,744	43-2		139	10,938	42-6
Freddie's Cons.	5912,799	126-5	D		628	85,003	1283-8		574	103,069	1335-5
Govt. G.M.A.f.	23028,339	2-8	D		1699	209,337	121-1		1775	226,621	195-3
Randfontein f.	23921,505	105-4	D		1707	163,543	716-9		1821	203,114	96-2
<b>Union</b>											
East Geduld...	14845,749	325-9	D		1003	309,942	2203-8		1039	319,507	2408-2
Geduld Prop...	10416,492	28-8	D		735	111,399	233-9		610	115,936	313-8
Grootvlei...	20043,009	232-3	D		1359	293,111	1592-0		1345	290,927	1681-4
Marievale...	7218,900	86-9	D		495	129,895	598-0		507	128,579	616-5
St. Helena...	11513,185	180-5	J		721	121,908	1140-6		725	176,953	877-3
Van Dyk...	8113,156	-9	D		561	91,149	10-4		559	92,786	13-1
<b>General Mining</b>											
Ellaton...	33	7,070	21-1	D	223	52,329	212-5		213	63,192	312-3
S. Roodepoort...	29	6,764	24-7	J	29	6,764	24-7		28	6,089	21-5
Stilfontein...	9035,550	209-2	D		618	242,887	1431-7		585	229,858	1445-1
W. Rand Cons.b	24625,570	236-4	D		1647	168,432	1582-4		1664	194,573	1567-4
<b>Anglo</b>											
Transvaal											
Hartbeestfont'n	6631,845	183-3	J		66	31,845	183-3		44	14,750	57-7
Merriespruit g.	7417,852	50-5	J		74	17,852	50-5		—	—	—
N. Klerksdorp b.	11	1,116	3-2	D	75	8,625	41-5		79	9,895	14-0
Rand Leases...	18428,152	4-6	J		184	28,152	4-6		191	30,274	40-3
Village M.R. g.	35	5,110	9-0	J	35	5,110	9-0		35	5,089	9-7
Virginia O.F.S.	8619,909	178-0	J		86	19,909	178-0		65	13,975	42-9
<b>Others</b>											
N. Kleinfontein...	10912,458	1-0	D		739	86,815	16-0		752	88,340	40-1
Wit Nigel...	19	4,003	7-4	J	19	4,003	7-4		18	3,975	8-4

\* Working Profit includes Sundry Revenue

† Working Profit

L constitutes a loss

a Main Reef production only

b Working Profit includes profit from Uranium (etc.), before allowing for loan

c interest and redemption

d Production commenced Jan. 1956

e Production commenced May 1955

f Production commenced May 1956

g Working Profit includes profit from Uranium, etc., after allowing for loan

h interest and redemption

i Production commenced March 1956

j Owing to change in financial year end to Sept. 30 from Dec. 31, previous

year's figures not comparable

## Company Shorts

**Lydenburg Issue Result.**—Out of the recent offer of 600,000 shares of 5s. each at 9s. per share made by Lydenburg Platinum, a total of 93.9 per cent was subscribed. The remaining 6.1 per cent was taken up by the underwriters.

**Progress of Bid for Streamline Filters.**—Although negotiations regarding the tentative offer for Streamline Filters are continuing, certain questions have still to be resolved. A further statement will, therefore, be made as soon as possible.

**Nundydroog Pays More.**—Nundydroog Mines has declared a dividend of 7½ per cent on its issued ordinary capital of £283,000 in respect of twelve months ended December 31, 1955. This compares with 4½ per cent for the previous year.

**Wit Gold to Return Further 3s. 6d. Per Share.**—Sales of various assets by Witwatersrand Gold Mining Company have resulted in a proposal to return a further 3s. 6d. per share. This would absorb £82,184 and reduce the capital to £117,406 in 469,625 shares of 5s. An extraordinary meeting is accordingly to be held on August 30 at Johannesburg.

**Nigel Gold to Close Down.**—Owing to working losses incurred during June and July, together with poor values disclosed in remaining ore reserves, it has been decided that mining operations at The Nigel Gold Mining Company will cease with effect from August 29 next. When operations cease, however, the company will not be liquidated but will continue in existence for the purpose of realizing its remaining assets.

**Great Western Consolidated Earns More.**—Total revenue earned by Great Western Consolidated during the year ended March 31, 1956, advanced to £A1,233,332 from £A885,940 in respect of the preceding twelve months. After working expenses operating profit was £A260,386 (£A85,177). Administration and interest charges totalled £A69,778 (£A52,546) and a net profit of £A190,608 (£A32,631) remained for appreciation.

**Kolar Nationalization Issue.**—At a press conference held earlier this week Mr. Arthur Taylor, representing the Kolar gold companies, said that the figure of 119 lakhs of rupees (about £900,000) reported to have been accepted by the Mysore government as net compensation for nationalization of the British gold mines, was only a quarter of the very minimum which could be considered reasonable. The figure of £900,000 was reported to have been suggested by a committee set up by the Indian Central government and based on share prices over a period of ten years.

In this connection Mr. Taylor emphasized that share prices over this period has been depressed by the incidence of taxation. If the price of shares is brought down by certain means, he said, and that price is then taken as the basis for nationalization, an injury is created.

**Twefontein United's Expansion Policy.**—In his statement to shareholders of Twefontein Colliery—of which company Twefontein United Collieries is a subsidiary—Sir Joseph Ball, the chairman, referred to the active policy of expansion which is being pursued. It was, he said, satisfactory to record that both profits and output achieved by Twefontein United for the twelve months ended December 31, 1955, had shown an increase over those of the previous year. Moreover, this had taken place despite a curtailment of effective underground working hours which followed upon the withdrawal by the Department of Mines of the additional half-hour per shift privilege for statutory inspection, and travelling time to the coal face. The larger profit, emphasized Sir Joseph, was partly due to an increase in the price of coal authorized by the Price Controller in November, 1955. But the effect of this increase was naturally only reflected in the results for the last two months of the company's financial year. The full benefit would, of course, be much greater during the current year. It was to be hoped that this would assist in making good the loss of revenue which, in past years, the company had derived from sales of coal for export.

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**KENT (F.M.S.) TIN DREDGING LTD.****MAJOR W. E. HOSKING'S STATEMENT**

The twenty-ninth annual general meeting of Kent (F.M.S.) Tin Dredging, Ltd., was held on August 3 at the Registered Office, Redruth.

**Major W. E. Hosking** (Chairman) presided.

The Reports and Accounts for the year ended December 31, 1955, having been circulated for the prescribed time were taken as read, as was also the Chairman's Statement, circulated with the Reports and Accounts, which was as follows:—

The Accounts for the financial year ended December 31, 1955, submitted herewith, show a profit of £4,144 after payment to the Malayan Government of £21,155 as Royalty on ore sales and provision of £11,711 for United Kingdom and Malayan taxation. It should be noted that the charge for taxation includes £4,682 for Profits Tax of which over £4,000 is not in fact applicable to the profit for the year but is a charge on the dividends paid which partly came from a transfer from General Reserve.

The Profit and Loss Appropriation Account was credited with £8,000 by a transfer from General Reserve Account. The sum of £1,673 was written off from Capital Expenditure (Plant and Equipment), and two dividends, each of 10 per cent, were paid absorbing a nett amount of £12,075. The balance unappropriated as at December 31, 1954, was £33,350 and this has now been reduced to £31,746, which it is proposed to carry forward.

The Annual Report of our General Managers, Messrs. Osborne & Chappel, circulated with the Reports and Accounts gives comparative statistics and a summary of conditions at the Mine.

1,488,600 cubic yards were treated for the production of 260.48 tons of tin ore with a recovery of 0.29 kati per cubic yard. In the previous financial year 1,582,300 cubic yards treated produced 359.28 tons of tin ore with a recovery of 0.38 kati per cubic yard. The price received for tin ore averaged £425 11s. 6d. per ton as compared with £413 1s. 5d. per ton for the year ended December 31, 1954. Since the close of the year under review Shareholders have been notified that output for the first three months of the current year was 52½ tons.

As anticipated, tin-ore production during the current year has been at a reduced rate, due to the lower grade of ground treated and difficult dredging conditions.

I visited Malaya in May of this year and was able to make a thorough inspection of the mine, and to see the difficulties caused by the high overburden in the north-western part of the property where the dredge has been operating for some months. Paddock water conditions were very poor owing to the overburden and the high proportion of clay in the ground being treated. Conditions are, however, expected to improve shortly as the dredge proceeds into the lower lying ground to the south.

Since the close of the last Financial Year an extensive boring programme has been commenced in the virgin ground at the southern part of the property as well as in the old dredge course which has been shewn to contain some deeper mineralized zones below the maximum digging depth of the dredge. This comprehensive investigation will take several months to complete and will determine whether workable reserves exist in depth.

**International Tin Agreement.**—It is understood that the International Tin Agreement came into force on July 1, 1956, and that the International Tin Council—the governing body of the pact—held its first meeting in London on Monday, July 2.

**POLITICAL**

In view of the impending political changes in Malaya and the possible effect on the future of Mining Companies operating

there, I take this opportunity of bringing to the Shareholders' notice the declared policy of the Malayan Government towards Overseas Capital and Private Enterprise. This policy was clearly defined by the High Commissioner in an address delivered to the Legislative Council in November last, in which he stated that the Federation Government willingly recognize the contributions Overseas Capital and Enterprise have made to the economic development and social well-being of the country as a whole, and that such Capital and Enterprise have no less an important role to play in the independent Malaya of the future. Therefore it is, and will remain, the policy of Government to accord to such Industry and Enterprise fair and considerate treatment and to foster an atmosphere in which the Overseas investor can invest and conduct undertakings in the country without fear of discrimination or unfairness and, after payment of legal taxes and obligations, remit to his country, within the framework of ordinary and reasonable Exchange Control requirements, funds for the payment of dividends and for repatriation of his capital. In return Government looks with confidence to Overseas Enterprises to identify themselves closely with the interests, aspirations and sentiments of the new and self-governing Malaya of the future.

References have also been made to Overseas Capital and Enterprise by the Ministers of Finance, National Resources and Economic Affairs, and the hope expressed by them that it will be possible to induce the capital already invested in Malaya to remain there and to encourage additional capital to come into the country.

Your Directors again have pleasure in placing on record their appreciation of the services rendered by the General Managers, the Resident Manager, the Staff and the Labour Force at the Mine during the year under review.

**CHAIRMAN'S SUPPLEMENTARY STATEMENT**

The Accounts and Balance Sheet, the General Managers' Report and the Chairman's Statement have been in your possession for the prescribed period and I now take the opportunity of making some additional remarks concerning the Labour situation in Malaya and your Company's financial position.

Shareholders will have gathered from recent Press Statements that some tension exists in Malaya between Trade Unions and the Malayan Mining Employers' Association, a body representing the larger employers of mine labour, both European and Chinese. The Malayan Mining Employees' Union which claims to represent the majority of mine workers, a claim disputed by the National Mine Workers' Union, has made a series of irresponsible and unreasonable demands on the employers which are completely unacceptable. It is understood that the Union has now announced that unless the demands are met a general strike may be called.

Your Company is well placed financially to meet this crisis which, if it occurs, will I hope be of short duration. Your Board has, with the help of the General Managers, and its Financial Advisers, been investigating the Company's financial position in relation to foreseeable future commitments, and it is possible that with the settlement of the labour dispute and clarification of certain points regarding the Company's position under the International Tin Agreement, and its contributions to the Buffer Stock which will commence in September next, it may be found that the liquid assets are in excess of requirements, in which case the Board will make certain recommendations to the Shareholders regarding a possible Capital Repayment.

The Statement of Accounts and Balance Sheet, together with the Directors' Report, were received and adopted.

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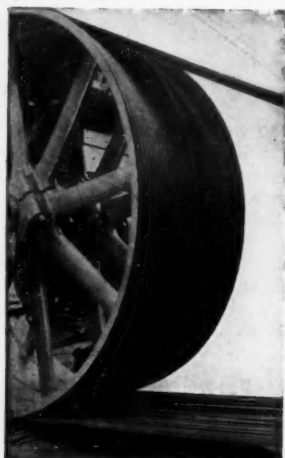
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